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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,678	11/14/2003	Hans Christian Alt	032301.354	2324
25461	7590	05/05/2004	EXAMINER	
SMITH, GAMBRELL & RUSSELL, LLP SUITE 3100, PROMENADE II 1230 PEACHTREE STREET, N.E. ATLANTA, GA 30309-3592			HERTZOG, ARDITH E	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/714,678

Applicant(s)

ALT ET AL.

Examiner

Ardith E. Hertzog

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11/14/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-7 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11142003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restriction*

1. Restriction to one of the following inventions is required under 35 U.S.C. § 121:
  - I. Claims 1-6, drawn to a process for producing anhydrous alkali sulfide by fluidized bed spray granulation, classified in class 423, subclass 566.2.
  - II. Claim 7, drawn to a device for performing the process according to claim 1, classified in class 422, subclass 139+.
2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. See MPEP § 806.05(e). In this case, the process as claimed can be practiced by another materially different apparatus, as evinced by claim 1 wherein no **specific** fluidized bed spray granulation apparatus is required.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, **and** because the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Robert G. Weilacher on April 28, 2004, a provisional election was made **with** traverse to prosecute the invention of Group I, claims 1-6. Affirmation of this election must be made by applicant in replying to this

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Office action. Thus, claim 7 is withdrawn from further consideration by the examiner, per 37 CFR § 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR § 1.48(b) and by the fee required under 37 CFR § 1.17(i).

#### ***Priority***

6. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. § 119(a)-(d); the certified copy of the prior foreign application has been received.

#### ***Information Disclosure Statement***

7. Acknowledgment is made of the information disclosure statement (IDS) filed November 14, 2003. The submission is in compliance with the provisions of 37 CFR § 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

#### ***Minor Informalities***

8. The title of the invention is not considered descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. While applicant is

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free to craft his own title, the following title is suggested: "FLUIDIZED BED SPRAY GRANULATION PROCESS FOR PRODUCING ANHYDROUS ALKALI SULFIDE".

9. The disclosure is objected to, because: "While there is no set statutory form for claims, the present Office practice is to insist that each claim must be the object of a sentence starting with 'I (or we) claim,' 'The invention claimed is' (or the equivalent)" (see MPEP § 608.01(m)). Appropriate correction is required.

### ***Claim Rejections - 35 U.S.C. § 112***

10. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 3 and 6 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Said claims are considered vague, indefinite, and/or confusing, due to antecedent basis problems. Claims 3 and 6 recite the limitation "the fluidizing gas" in, respectively, claims 1 and 4, but no "gas" is explicitly recited in either claim 1 or 4. Thus, there is insufficient antecedent basis for this limitation in claims 3 and 6. Appropriate correction is required.

### ***Claim Rejections - 35 U.S.C. § 103***

12. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Uhlemann et al. (US 4,946,654, hereinafter "Uhlemann et al. '654") in view of Abraham et al. (WO 01/25146 cited by applicant). Uhlemann et al. '654 teach processes for preparing granulates utilizing fluidized bed spray granulation, as broadly recited in applicant's claim 1 (see Uhlemann et al. '654 abstract). Uhlemann et al. '654 teach that the process is "generally carried out under atmospheric pressure" (see col. 9, lines 11-12) and that the gas which serves as "fluidising gas and for solidifying the sprayed-in product" can preferably be "inert gases such as, for example, nitrogen" (see col. 11, lines 45-52; also see Uhlemann et al. '654 Examples 5-10 which use nitrogen as the "fluidising gas"), thereby teaching the pressure, as well as inert gas, requirements of instant claims 2 and 5. Uhlemann et al. '654 also teach that "the product to be granulated is sprayed in liquid form... [which] can be a melt, solution or suspension (slurry)" (see col. 4, lines 22-25), i.e., liquid forms such as those generally recited in instant claim 4. Lastly, Uhlemann et al. '654 teach that "the product to be granulated... in liquid form... can contain one or more active components" (see col. 4, lines 22-27), including "inorganic chemicals" (see col. 4, lines 39-43); such "inorganic chemicals are those substances which are preferably used in the form of aqueous dispersions for synthetic purposes" (see col. 6, lines 1-3). Uhlemann et al. '654 fail, however, to teach the **specific** inorganic chemical, alkali (metal) sulfide, required by applicant's claims.

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14. Abraham et al. teach methods of preparing anhydrous alkali metal sulfides by spray drying (see Abraham et al. abstract). Abraham et al. teach that:

Alkali metal sulfides are useful as chemical reagents in, for example, dye production and polymer synthesis... [,] typically available in the form of aqueous solutions or solid hydrated flakes or pearls. Commercially available alkali metal sulfides in solid hydrated flake form generally contain between 30 and 40 percent by weight of water, based on total weight. The water that is present in the solid hydrated alkali metal sulfide may interfere with chemical reactions in which it is used, e.g., decreasing rates of reaction and/or process yields. Accordingly, the use of anhydrous alkali metal sulfides would be preferred for certain chemical reactions and processes. (see p. 1, lines 15-26)

Abraham et al. also teach that :

It is desirable to pursue the continued development of new methods of preparing anhydrous alkali metal sulfides. It is further desirable that such newly developed methods not result in the formation of fused or oxidized products, and not require the use of reduced pressure. (see p. 3, lines 13-17)

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have selected an alkali metal sulfide when having used an inorganic chemical in the Uhlemann et al. '654 fluidized bed spray granulation processes, because, again, Uhlemann et al. '654 clearly teach that inorganic chemicals make suitable products to be so granulated, with the above teachings of Abraham et al. establishing that, not only are alkali metal sulfides known to be "useful as chemical reagents", but **also** that the pursuit of new processes for preparing same in anhydrous form continues to be an area of active interest in the spray drying art. Note that the Uhlemann et al. '654 processes do "not require the use of reduced pressure", as specifically discussed in Abraham et al. (see again Abraham et al. p. 3, line 17).

15. Claims 3 and 6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Uhlemann et al. '654 in view of Abraham et al., as applied to claims 1 and 4 above,

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and **further** in view of Abraham et al. Uhlemann et al. '654 and Abraham et al. are relied upon as set forth in paragraphs 13.-14. above, considered to have rendered fluidized bed spray granulation processes within the scope of applicant's claims 1 and 4 (upon which instant claims 3 and 6 respectively depend) *prima facie* obvious. However, recycling and condensing of the fluidizing gas, as required by instant claims 3 and 6, is not disclosed in the primary reference, Uhlemann et al. '654.

16. Again, Abraham et al. teach methods of preparing anhydrous alkali metal sulfides by spray drying (see Abraham et al. abstract), wherein a drying inert gas stream "may optionally be further processed and recycled" (see p. 10, lines 1-3, 20-23). Specifically, "the water vapor... may be removed by known means of dehydration" and the resultant "inert gas stream may then be recycled..." (see p. 10, lines 23-27; see also p. 12, lines 17-20), i.e., steps within the scope of those additionally required by instant claims 3 and 6. Accordingly, when having utilized sodium sulfide in the Uhlemann et al. '654 processes (i.e., when having combined the teachings of Uhlemann et al. '654 and Abraham et al. as previously discussed), it would have been **further** obvious to one of ordinary skill in the art, at the time the invention was made, to have recycled and condensed any of the inert gases used in the Uhlemann et al. '654 processes, because, again, Abraham et al. clearly teach that such steps may be used when preparing anhydrous sodium sulfide granulates, **and** because the efficiency benefits of recycling **any** chemical processing stream, whenever possible, are considered to have been well known in the art.



### ***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are considered cumulative to or less material than those discussed above. Note that US 6,503,474 is an equivalent of EP 0 942 156 cited by applicant. Note that US 6,680,032 is a continuation of Uhlemann et al. '654 applied above. Mayers (US 1,946,089) establishes that processes for production of anhydrous sodium sulfide which include at least a drying step have been long known in the art. Scoggin (US 3,786,035) teaches that air or oxygen should be excluded from "reaction media during the preparation and use of alkali metal sulfide reactants... in order to minimize or eliminate the occurrence of alkali metal thiosulfate impurities in alkali metal sulfide reactants" (see col. 1, lines 54-60). WO 93/15813 teaches fluidized bed spray granulation processes comprising "a closed system in which a current of steam circulates, from which the water evaporated from the process substance is drawn as a partial current and to which the released thermal energy is supplied again. The process is free from exhaust fumes..." (see English abstract). The remaining US references are drawn in general to fluidized bed spray granulation processes.

18. Any inquiry concerning this communication from the examiner should be directed to Ardith E. Hertzog at telephone number is (571) 272-1347. The examiner can normally be reached on Monday through Friday (from about 8:00 a.m. - 4:30 p.m.).

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman, can be reached on (571) 272-1358. The fax phone number for the organization where this application is assigned is 703-872-9306.

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20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. For any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



AEH  
April 29, 2004



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